Introduction

Earnings management (E-Mag) is the choice of a manager in selecting and determining accounting policies, or a real action that affects the company’s profits to achieve multiple objectives in making financial report (Scott, 2015) and the philosophy of E-Mag is taking advantage of the methods and principles of flexible accounting standards (Moghaddam & Abbaspour, 2017). In general, earnings management can be defined as manager intervention in the process of making financial statements.
that provides information to external parties.

In the other side, company’s earning is one of reason for investor to make investment decision and majority investor does not like the company with fluctuation earning because it represents the existence of high risk. In tax perspectives, earning fluctuation becomes another problem in fulfilling tax rules because the rule complexity made company must avoid tax case to concentrate only in their main business. For management themselves it is about reward. E-Mag has strategic role in firm’s management.

Technically, there are many factors affects E-Mag, but 4 following factors encountered inconsistent result in previous studies that is Company’s risk proxied by non-performing loan (NPL), Liquidity proxied by Loan to Deposit Ratio (LDR), Leverage (LEV) and Capital Adequacy proxied by Capital Adequacy Ratio (CAR)

The existence of research gap on NPL came from Friscilia and Lukman (2015) found that NPL has no effect on E-Mag, but opposite result appears on work by Kamil and Herawati (2016). While inconsistent result in the direction effect of LDR found on studies by Moghaddam & Abbaspour (2017), Sadeghi & Zareie (2015), and Mulyana, et al (2018) stated that LDR has a positive and significant effect, while Chuong (2018) declares negative effect on E-Mag. Inconsistency about the direction effect of LEV found on studies by Moghaddam & Abbaspour (2017), Sadeghi & Zareie (2015) concluded that LEV has a significant positive effect on E-Mag, but opposite direction appears on study by Dang, et al (2017) and Chuong (2018). While Agnemas et al (2017), Yullyandra et al (2019), Domenico and Iftekhar (2013), Sadeghi and Zareie (2015), Abdul Karim & Narges (2017) states that CAR has significant negative effect but Maryani and Silvi (2020), Salhuteru & Wattimena (2015), Tahayyunihayah (2017 states that CAR has no effect on E-Mag. Meanwhile, bank operates in business with rigid rules, for instance banks must have a minimum amount of CAR for cover the risk of their operational activity, therefore CAR has a potential in strengthening or weakening the relation of observe variables on E-Mag. Based on the important role of Earning Management and the existence of inconsistency result of NPL,LDR, LEV and CAR in previous studies, also the possibility of CAR becomes moderates variable, this research is conducted with the title The Relation of Company Risk, Liquidity, Leverage, Capital Adequacy and Earnings Management (Evidence from Indonesia Banking Companies).

2. Theoretical Review and Hypotheses Development

2.1 The Grand Theory: The Agency, Stakeholder and Positive Accounting Theory

Agency theory explains the existence of agency problem and how to resolve as consequences of shareholder (principal) absence in running their own business and appointing third parties (agent/management) (Berk et al., 2011) to presence. Hence, the main task of the agent is to make shareholder more prosperous, one of which appears in company’s earning. Management explores all firms’ resources to produce high performance in achieving earning included executing Earning Management. Meanwhile, F. Edward Freeman, stakeholder theory’s originator starting explained that stake holder “ is any group or individual who can affect or is affected by the achievement of the organization objectives”, therefore taking into account all parties with interest in the company unavoidable in all management actions, included managing the company’s earning. On the other hand, Positive Accounting Theory describes the accountant’s behavior road map, promotes by Watts & Zimmerman in 1986, based on Fama’s hypotheses titled Efficient Market Hypothesis (EMH). Further, Watts & Zimmerman explains the capital market will react when abnormal return appears in firm’s financial report, whether caused by nature or accountant intervention. Accounting practices employed by accountant driven by bonus plan, debt covenant and political cost (Indracahya, 2017. Earning Management is one form of accounting practice.
2.2 Literature supports Dependent Variable

Earnings management (E-Mag) is the choice of a manager in selecting and determining accounting policies, or a real action that affects the company’s profits to achieve multiple objectives in making financial report (Scott, 2015). Technically is made by taking advantage of the methods and principles of flexible accounting standards (Moghaddam & Abbaspour, 2017. In general, earnings management can be defined as manager intervention in the process of making financial statements that provides information to external parties. There are some models to measure E-Mag, one of other is Jones Model as the popular one which calculated E-Mag with the formula as follows:

\[
TAC_{it} = E_{it} - OCF_{it}
\]

Where,

TACit = Total Accruals i in year t
Eit = Operational Profit Company i in year t
OCFit = Cash flow from Operation company i in year t

Then specify non-discretionary accruals for the \( \alpha_1, \alpha_2, \alpha_3 \) parameters with the following equations:

\[
\frac{TAC_{it}}{A_{it-1}} = \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV_{it}}{A_{it-1}} + \epsilon_{it}
\]

Where,

TACit = Total Accrual Company i in year t
Ait-1 = book value of total company assets i in year t
\( \Delta REV_{it} \) = Change of Company sales revenue between t and t-1
\( \epsilon_{it} \) = Error
\( \alpha_1, \alpha_2, \alpha_3 \) = Estimated company’s value i

After calculating the \( \alpha_1, \alpha_2, \alpha_3 \) parameters, it can be determined non-discretionary accrual values with the following equation:

\[
NDA_{it} = \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV_{it}}{A_{it-1}}
\]

Where,

NDAit = non-discretionary accruals company i in year t
\( \Delta REV_{it} \) = change of Company sales revenue between t and t-1

The calculation of discretionary accrual values by using this following equation:

\[
DAC_{it} = \frac{TAC_{it}}{A_{it-1}} - NDA_{it}
\]

2.3 Literature supports Independent Variables

2.3.1 Company Risk

The risk of banking companies could be seen from the risk of bad credit faced by banks due to failure of counterpart to fulfill liabilities (Bank Indonesia, 2011). One of the measurements of credit risk is the value of non-performing loan (NPL) ratio which could be calculated by dividing the affected loan by the total loan (Kingu et al, 2015). Bank Indonesia determines the sound ratio of non-performing loan (NPL) is \( \leq 5\% \) (regulation of Bank Indonesia, 2012).

\[
NPL = \frac{\text{Non Performing Loans}}{\text{Total Loans}} \times 100\%
\]

The relation between Company Risk proxied by NPL described by Krisna (2008) where high NPL will decrease bank’s income, other that will increase the credit back up cost, in turn decrease bank’s capital and finally will drive management executing E-Mag. Dang et al (2018) states that bank with high NPL tends perform E-Mag. **Company Risk effects Earning Management (H’)**
2.3.2 Liquidity

Liquidity relates with firm’s ability to meet short-term obligation (Subramanyam, 2014) calculated as the proportion of current asset to current liability (Brigham & Houston, 2010). In bank’s operation the liquidity could be measured by Loan to Deposit Ratio (LDR) as follows:

\[
LDR = \frac{\text{total credit}}{\text{total third party funds}}
\]

According to Bank Indonesia Regulation (2015), the minimum limit for this ratio is 80%, while the maximum limit of LDR ratio is 92%. High LDR portrays bank’s liquidity in riskier condition, while the lower LDR describes as inability bank in credit distribution that made bank lost opportunity to make profit (Winarso and Salim, 2017). On the other hand, high LDR causes low liquidity and need external financing, in turn drives to execute E-Mag, so that credit risk lower and income reported higher and finally creditor’s trust could be attained. Liquidity affects Earning Management (H²)

2.3.3 Leverage

Leverage refers to debt financing in the corporate capital structure (Subramanyam, 2014; Widiatmoko & Mayangsari, 2016). Leverage can be calculated using several ratios, one of which is debt to equity ratio which is a percentage between total debt to total assets (Kashmir, 2010) as follows:

\[
\text{debt to equity ratio} = \frac{\text{total debts}}{\text{equity}} \times 100\%
\]

High Leverage (DER) has the potential to increase bank risk and capital requirements so that managers are more likely to do earnings management through the use of accruals to increase interest rates income and provide the possibility of funding through shareholders (Gombolaa, et al., 2016). Companies with a high level of leverage due to the total amount of debt to total capital will suffer a high risk that the companies are threatened not to meet their obligations. Leverage affects Earning Management (H³)

2.3.4 Capital Adequacy Ratio (CAR)

In banking business, capital refers an investment by shareholder that must be always stays in banking finance and no obligation to use it (Idroes and Sugiarto, 2006). Banks must maintain a minimum amount of capital regulated by the central bank as a banking regulator to cover the risks of their own operational activities. The capital adequacy ratio is the provision of minimum capital that must be maintained by each bank in a certain proportion of total assets weighted by risk (ATMR) at 8% minimum (Bank Indonesia, 2013). Capital Adequacy is the result of the basic capital with total risk-weighted assets (Zedan and Daas, 2017).

\[
\text{CAR} = \frac{\text{initial capital (main)} + \text{capital supplement (sub)}}{\text{weighted assets by risks}}
\]


On the other hand, Company Risk, Liquidity and Leverage affects directly to Capital Adequacy Ratio, besides CAR is a measure of bank financial health that is CAR also explored as moderating variables of Company Risk, Liquidity and Leverage in relation with E-Mag. CAR moderates the relation between Company Risk and Earning Management (H⁵). CAR moderates the relation between Liquidity and Earning Management (H⁶) and CAR moderates the relation between Leverage and Earning Management (H⁷)

2.4 Conceptual Framework and Hypotheses

Based on the discussion in literature review and hypotheses development, the relation between
Company Risk, Liquidity, Leverage, Capital Adequacy and Earning Management shows on Figure 01.

**Figure 01.** Conceptual Framework

### 3. Methodology

#### 3.1 Research Design and Subject

This research is a causality study aimed at testing the hypothesis about the effect of company’s risk, leverage, liquidity, capital adequacy as an independent variable on earnings management as a dependent variable and capital adequacy as a moderation variable. The subject of the study is banking companies listed in Indonesia Stock Exchange during 2014 to 2018 and sampling technique used purposive sampling while data collected through IDX website and library research.

#### 3.2 Analysis Method

The study implicates panel data, hence regression used in analysis which supported by 11.0 version E-views thru 5 steps as follows: a) Descriptive Statistic Analysis, b) model estimation, c) model selection, d) classical Assumption Test and e) hypotheses test, comprises: Determination Coefficient Analysis (R2), Statistical F Test, t-Test and multiple linear regression analysis.

### 4. Result and Discussion

#### 4.1 Descriptive Statistic Analysis

**Table 1.** Descriptive Statistic Test Result

<table>
<thead>
<tr>
<th></th>
<th>EMAG</th>
<th>NPL</th>
<th>LDR</th>
<th>LEV</th>
<th>CAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>-0.000736</td>
<td>3.019458</td>
<td>84.54865</td>
<td>8.125610</td>
<td>20.67394</td>
</tr>
<tr>
<td>Median</td>
<td>-0.000645</td>
<td>2.605893</td>
<td>86.61426</td>
<td>6.084224</td>
<td>19.08304</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.006914</td>
<td>15.82105</td>
<td>146.3757</td>
<td>56.49693</td>
<td>66.42836</td>
</tr>
<tr>
<td>Minimum</td>
<td>-0.006586</td>
<td>0.000000</td>
<td>42.12239</td>
<td>0.622413</td>
<td>8.021778</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.001437</td>
<td>2.243124</td>
<td>13.65273</td>
<td>6.667645</td>
<td>7.260275</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.062244</td>
<td>2.454910</td>
<td>-0.281813</td>
<td>2.834892</td>
<td>2.567069</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>479.8791</td>
<td>1075.327</td>
<td>51.84550</td>
<td>191.644</td>
<td>118.617</td>
</tr>
<tr>
<td>Probability</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
</tr>
<tr>
<td>Sum</td>
<td>-0.150798</td>
<td>618.9888</td>
<td>17332.47</td>
<td>1669.750</td>
<td>4238.158</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>0.000421</td>
<td>1026.447</td>
<td>38024.99</td>
<td>9060.328</td>
<td>10753.17</td>
</tr>
<tr>
<td>Observations</td>
<td>205</td>
<td>205</td>
<td>205</td>
<td>205</td>
<td>205</td>
</tr>
</tbody>
</table>

**Source:** 11.0 Version E-Views Output, 2020
Non-Performing Loan (NPL). The NPL minimum value of 0% was owned by PT. Bank National Nobu in 2014 and 2015 and the maximum of 15.82% was on PT. Bank of India Indonesia in 2016 while the average value was 3.02% and a standard deviation of 2.24%. By average value of 3.02%, Indonesia banking companies complies with the rule about minimum NPL of ≤ 5%.

Liquidity (LDR). The LDR minimum value of 42.12% was PT. Bank Mitraniga in 2017 and the maximum of 146.37% on behalf of PT. Bank Woori Saudara Indonesia 1906 in 2018, while the average value is 84.54% with a standard deviation of 13.65%. The allowed range of LDR is between 80% up to 92%, that is by average LDR of 84.54 %, Indonesia banking companies complies with the rule about LDR requirement.

Leverage (LEV). The LEV has minimum value of 0.06 % owned by Bank INA Perdana in 2017 and the maximum value of 0.56% on behalf of PT. The Regional Development Bank (BPD) of Banten in 2015, while the average value is 8% and the deviation standard of 0.07%.

Capital Adequacy (CAR). The CAR minimum value of 8.02% obtained by PT. Bank Pembangunan Banten in 2015, and the maximum value of 66.46% owned by PT. Bank Ina Perdana in 2017, while the average value is 20.67% and the deviation standard of 7.26%. CAR minimum must be maintained is 8%, therefore by average value of 20.67% Indonesia banking companies complies with the rule about CAR requirement.

4.2 Panel Data Regression Model Formulation

The regression model in E-views formulates through 2 steps that is model estimation and model selection.

4.2.1 Panel Data Regression Model Estimation

In model estimation, E-views offers 3 estimation models consisted of Common Effect, Fixed Effect and Random Effect regression model as stated on table 2, 3, 4 and the best model must be chosen through selection model step.

Table 2. Common Effect Model Estimation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.004717</td>
<td>0.002004</td>
<td>2.353480</td>
<td>0.0196</td>
</tr>
<tr>
<td>NPL</td>
<td>0.000175</td>
<td>0.000123</td>
<td>1.418686</td>
<td>0.1576</td>
</tr>
<tr>
<td>LDR</td>
<td>-7.80E-05</td>
<td>2.56E-05</td>
<td>-3.043767</td>
<td>0.0027</td>
</tr>
<tr>
<td>LEV</td>
<td>5.37E-05</td>
<td>3.71E-05</td>
<td>1.447393</td>
<td>0.1494</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.000199</td>
<td>8.88E-05</td>
<td>-2.244323</td>
<td>0.0259</td>
</tr>
<tr>
<td>CAR*NPL</td>
<td>2.37E-06</td>
<td>5.28E-06</td>
<td>0.447969</td>
<td>0.6547</td>
</tr>
<tr>
<td>CAR*LDR</td>
<td>2.50E-06</td>
<td>1.17E-06</td>
<td>2.147924</td>
<td>0.0329</td>
</tr>
<tr>
<td>CAR*LEV</td>
<td>-1.28E-06</td>
<td>2.28E-06</td>
<td>-0.561441</td>
<td>0.5751</td>
</tr>
<tr>
<td>Root MSE</td>
<td>0.001271</td>
<td>R-squared</td>
<td>0.214764</td>
<td></td>
</tr>
<tr>
<td>Mean dependent var</td>
<td>-0.000736</td>
<td>Adjusted R-squared</td>
<td>0.186863</td>
<td></td>
</tr>
<tr>
<td>S.D. dependent var</td>
<td>0.001437</td>
<td>S.E. of regression</td>
<td>0.001296</td>
<td></td>
</tr>
<tr>
<td>Akaike info criterion</td>
<td>-10.42057</td>
<td>Sum squared resid</td>
<td>0.000331</td>
<td></td>
</tr>
<tr>
<td>Schwarz criterion</td>
<td>-10.29089</td>
<td>Log likelihood</td>
<td>1076.108</td>
<td></td>
</tr>
<tr>
<td>Hannan-Quinn criter.</td>
<td>-10.36812</td>
<td>F-statistic</td>
<td>7.697161</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>1.477279</td>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
<td></td>
</tr>
</tbody>
</table>

Source: 11.0 Version E-Views Output, 2020
Table 3. Fixed Effect Model Estimation

Dependent Variable: EMAG  
Method: Panel Least Squares  
Date: 11/01/20  Time: 17:07  
Sample: 2014 2018  
Periods included: 5  
Cross-sections included: 41  
Total panel (balanced) observations: 205

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.004745</td>
<td>0.003006</td>
<td>1.578175</td>
<td>0.1165</td>
</tr>
<tr>
<td>NPL</td>
<td>0.000223</td>
<td>0.000151</td>
<td>1.479053</td>
<td>0.1411</td>
</tr>
<tr>
<td>LDR</td>
<td>-8.04E-05</td>
<td>3.75E-05</td>
<td>-2.142288</td>
<td>0.0337</td>
</tr>
<tr>
<td>LEV</td>
<td>5.70E-05</td>
<td>4.65E-05</td>
<td>1.226102</td>
<td>0.2220</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.000191</td>
<td>0.000114</td>
<td>-1.678595</td>
<td>0.0952</td>
</tr>
<tr>
<td>CAR*NPL</td>
<td>2.80E-06</td>
<td>6.59E-06</td>
<td>0.424634</td>
<td>0.6717</td>
</tr>
<tr>
<td>CAR*LDR</td>
<td>2.32E-06</td>
<td>1.52E-06</td>
<td>1.226102</td>
<td>0.2220</td>
</tr>
<tr>
<td>CAR*LEV</td>
<td>-4.18E-07</td>
<td>3.89E-06</td>
<td>-0.107490</td>
<td>0.9145</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

Root MSE 0.001106  R-squared 0.405243
Mean dependent var -0.000736  Adjusted R-squared 0.227195
S.D. dependent var 0.001437  S.E. of regression 0.001264
Akaike info criterion -10.30816  Sum squared resid 0.000251
Schwarz criterion -9.530087  Log likelihood 1104.586
Hannan-Quinn crit. -9.993447  F-statistic 2.276032
Durbin-Watson stat 1.971315  Prob(F-statistic) 0.000084

Source: 11.0 Version E-Views Output, 2020

Table 4. Random Effect Model Estimation

Dependent Variable: EMAG  
Method: Panel EGLS (Cross-section random effects)  
Date: 11/01/20  Time: 17:09  
Sample: 2014 2018  
Periods included: 5  
Cross-sections included: 41  
Total panel (balanced) observations: 205

Swamy and Arora estimator of component variances

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.004718</td>
<td>0.002102</td>
<td>2.244416</td>
<td>0.0259</td>
</tr>
<tr>
<td>NPL</td>
<td>0.000185</td>
<td>0.000126</td>
<td>1.462767</td>
<td>0.1451</td>
</tr>
<tr>
<td>LDR</td>
<td>-7.85E-05</td>
<td>2.68E-05</td>
<td>-2.931624</td>
<td>0.0038</td>
</tr>
<tr>
<td>LEV</td>
<td>5.46E-05</td>
<td>3.80E-05</td>
<td>1.438715</td>
<td>0.1518</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.000098</td>
<td>9.19E-05</td>
<td>-2.153716</td>
<td>0.0325</td>
</tr>
<tr>
<td>CAR*NPL</td>
<td>2.39E-06</td>
<td>5.45E-06</td>
<td>0.438922</td>
<td>0.6612</td>
</tr>
<tr>
<td>CAR*LDR</td>
<td>2.49E-06</td>
<td>1.21E-06</td>
<td>2.062244</td>
<td>0.0405</td>
</tr>
<tr>
<td>CAR*LEV</td>
<td>-1.23E-06</td>
<td>2.40E-06</td>
<td>-0.513370</td>
<td>0.6083</td>
</tr>
</tbody>
</table>

Effects Specification

S.D. | Rho
---|---
Cross-section random 0.000363 0.0762
Idiosyncratic random 0.001264 0.9238
Weighted Statistics

- Root MSE: 0.001226
- Mean dependent var: -0.000619
- S.D. dependent var: 0.001385
- Sum squared resid: 0.000308
- Durbin-Watson stat: 1.588093

- R-squared: 0.212655
- Adjusted R-squared: 0.184679
- S.E. of regression: 0.001251
- F-statistic: 7.601153
- Prob(F-statistic): 0.000000

Unweighted Statistics

- R-squared: 0.214397
- Mean dependent var: -0.000736
- Sum squared resid: 0.000331
- Durbin-Watson stat: 1.478218

Source: 11.0 Version E-Views Output, 2020

4.2.2 Panel Data Regression Model Selection

In selection model, there is 3 tests in selecting the models namely the Chow, the Hausman and the Lagrange Multiplier test.

Chow Test elect model by comparing common and fixed effect model for testing the hypotheses as follows:

H0: Common Effect Model
H1: Fixed Effect Model

With condition H0 will be rejected if P-value < α (α = 5%) and accepted if P-value > 0.05 and vice versa and the result shows that the value of Cross section F probability of 0.1634 > 0.05, that is Common Effect Model selected as seen on part of test result on Table 5.

Table 5. Chow Test Result

<table>
<thead>
<tr>
<th>Effects Test</th>
<th>Statistic</th>
<th>d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>1257035</td>
<td>(40,157)</td>
<td>0.1634</td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
<td>56.955454</td>
<td>40</td>
<td>0.0399</td>
</tr>
</tbody>
</table>

Source: 11.0 Version E-Views Output, 2020

Selection model in Hausman Test done by comparing Fixed Effect and Random Effect Model and testing the hypotheses as follows:

H0: Random Effect Model
H1: Fixed Effect Model

Under condition if P-value < 0,05, Ho rejected and if P-value > 0,05, Ho accepted. The result appears that Cross Section prob 0.0882 > 0.05, therefore Random Effect Model selected seen on Table 6.

Table 6. Hausman Test Result

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>3.030664</td>
<td>7</td>
<td>0.8822</td>
</tr>
</tbody>
</table>

Source: 11.0 Version E-Views Output, 2020
Meanwhile Lagrange Multiplier Test selects models by comparing Common Effect and Random Effect Model for preferable model and testing the hypotheses as follows:

- **H₀**: Common Effect Model
- **H₁**: Random Effect Model

Under condition if P-value < 0.05, **H₀** rejected and if P-value > 0.05, **H₀** accepted. The result of Hausman Test shown that the probability of Chi Square value is 0.3877 > 0.05, therefore Common Effect selected as appears on Table 7.

### Table 7. Lagrange Multiplier Test Result

<table>
<thead>
<tr>
<th>Test Hypothesis</th>
<th>Cross-section</th>
<th>Time</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breusch-Pagan</td>
<td>0.746226</td>
<td>9.323087</td>
<td>10.06931</td>
</tr>
<tr>
<td>Honda</td>
<td>0.863844</td>
<td>3.053373</td>
<td>2.769891</td>
</tr>
<tr>
<td>King-Wu</td>
<td>0.863844</td>
<td>3.053373</td>
<td>3.171736</td>
</tr>
<tr>
<td>Standardized Honda</td>
<td>1.310357</td>
<td>3.801414</td>
<td>-1.598922</td>
</tr>
<tr>
<td>Standardized King-Wu</td>
<td>1.310357</td>
<td>3.801414</td>
<td>0.625345</td>
</tr>
<tr>
<td>Gourieroux, et al.*</td>
<td>--</td>
<td>--</td>
<td>10.06931</td>
</tr>
</tbody>
</table>

**Source:** 11.0 Version E-Views Output, 2020

The following table 8 summarizes the result of selection model.

### Table 8. Selection Model Result

<table>
<thead>
<tr>
<th>The Test Type</th>
<th>Comparing Model</th>
<th>Cross Section Probability</th>
<th>Model Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chow</td>
<td>Common Effect Vs Fixed Effect</td>
<td>0.1634</td>
<td>Common Effect</td>
</tr>
<tr>
<td>Hausman</td>
<td>Fixed Effect Vs Random Effect</td>
<td>0.0882</td>
<td>Random Effect</td>
</tr>
<tr>
<td>Lagrange Multiplier</td>
<td>Common Effect Vs Random Effect</td>
<td>0.3877</td>
<td>Common Effect Model</td>
</tr>
</tbody>
</table>

**Source:** Processed Data, 2020

Based on the above table, the model selected is Common Effect Model.

### 4.3 Classical Assumption Test

The minimum test must be run to meet the assumption of BLUE (Best Linear Unbiased Estimation) is Multicollinearity, Heteroscedasticity and Autocorrelation test (Ekananda, M, 2016).

#### 4.3.1 Multicollinearity Test

Multicollinearity test aims to find the existence of the correlation between independent variables, BLUE assumption needs no multicollinearity. The result shown on Table 9.
Table 9. Multicollinearity Test Result

<table>
<thead>
<tr>
<th></th>
<th>NPL</th>
<th>LDR</th>
<th>LEV</th>
<th>CAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL</td>
<td>1</td>
<td>0.09127050</td>
<td>0.1380116</td>
<td>-0.0887940</td>
</tr>
<tr>
<td>LDR</td>
<td>0.09127050</td>
<td>1</td>
<td>0.1980116</td>
<td>-0.1369011</td>
</tr>
<tr>
<td>LEV</td>
<td>0.13127050</td>
<td>0.1980116</td>
<td>1</td>
<td>-0.3447355</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.0887940</td>
<td>0.1369011</td>
<td>-0.3447355</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: 11.0 Version E-Views Output, 2020

All of correlation coefficient between NP, LDR, LEV and CAR < 0.80 as seen on Table 4.9, concluded that there is no multicollinearity problem.

4.3.2 Heteroscedasticity Test

E-views model estimation of Common Effect and Fixed effect are potential experiences heteroscedasticity problem. To resolve this, the preferable model is found by comparing the model selected with and without weight. The following tables shows Common Effect Model without (table 2) and with weight (table 10).

Table 10. Weighted Common Effect Model

Dependent Variable: EMAG
Method: Panel EGLS (Cross-section weights)
Date: 11/01/20   Time: 17:06
Sample: 2014 2018
Periods included: 5
Cross-sections included: 41
Total panel (balanced) observations: 205
Linear estimation after one-step weighting matrix

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.003397</td>
<td>0.001016</td>
<td>3.344607</td>
<td>0.0010</td>
</tr>
<tr>
<td>NPL</td>
<td>0.000167</td>
<td>7.37E-05</td>
<td>2.271094</td>
<td>0.0242</td>
</tr>
<tr>
<td>LDR</td>
<td>-6.10E-05</td>
<td>1.44E-05</td>
<td>-4.242391</td>
<td>0.0000</td>
</tr>
<tr>
<td>LEV</td>
<td>2.86E-05</td>
<td>2.39E-05</td>
<td>1.195965</td>
<td>0.2331</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.000186</td>
<td>4.26E-05</td>
<td>-4.374756</td>
<td>0.0000</td>
</tr>
<tr>
<td>CAR*NPL</td>
<td>1.17E-06</td>
<td>3.12E-06</td>
<td>0.375505</td>
<td>0.7077</td>
</tr>
<tr>
<td>CAR*LDR</td>
<td>2.45E-06</td>
<td>6.35E-07</td>
<td>3.865543</td>
<td>0.0002</td>
</tr>
<tr>
<td>CAR*LEV</td>
<td>-1.05E-06</td>
<td>1.16E-06</td>
<td>-0.900336</td>
<td>0.3690</td>
</tr>
</tbody>
</table>

Weighted Statistics
Root MSE 0.001211     R-squared 0.361095
Mean dependent var -0.000188     Adjusted R-squared 0.338939
S.D. dependent var 0.000167     S.E. of regression 0.001235
Sum squared resid 0.000301     F-statistic 15.90574
Durbin-Watson stat 1.446828     Prob(F-statistic) 0.000000

Unweighted Statistics
R-squared 0.183056     Mean dependent var -0.000736
Sum squared resid 0.000344     Durbin-Watson stat 1.458758

Source: 11.0 Version E-Views Output, 2020

The comparation of un-weighted and weighted Common Effect model seen on the following table 11.
Table 11. Unweighted and Weighted Common Effect Model Comparison

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unweighted Common Effect</th>
<th>Weighted Common Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistic t probability</td>
<td>3 &lt; 0.05</td>
<td>4 &lt; 0.05</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.214764</td>
<td>0.361095</td>
</tr>
<tr>
<td>Statistic F probability</td>
<td>0.000000</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Processed Data, 2020

Based on 3 parameters, the weighted Common Effect Model is preferable than unweighted, therefore the final model selected is weighted Common Effect model as represented on table 10.

4.3.3 Autocorrelation Test

The existence correlation between observation in the form of time series or cross section could be identified by autocorrelation test, and by condition the panel data is characterized by this form, therefore autocorrelation is ignored (Ekananda, M, 2016).

4.4 Hypotheses Test

Based on model selection formulation, the preferable model in Common Effect Model and further heteroscedasticity test concluded that the weighted is better that unweighted version, therefore the hypotheses test is referred on weighted Common Effect Model as stated on table 4.11.

4.4.1 The Determination Coefficient (Adjusted R²)

Table 4.11. states that the Adjusted R² value of 0.361095 means that all independent variables, Non-Performing Loan (NPL), Liquidity Ratio (LDR), Leverage (LEV), Capital Adequacy Ratio (CAR) and CAR moderates NPL, LDR, LEV are able to describe Earning Management (E-mag) amounting to 36.10%. The value of 36.10% explains that the effect of all independent variables on Earning Management is weak because < 0.50.

4.4.2 The F Statistics Test (simultaneously)

The F-value of 15.90574 with probability of 0.000000 < 0.05, indicates that all independents variables (NP, LDR, LEV and CAR) collectively affects Earning Management.

4.4.3 The t-test (partial)

Due to the t-statistics probability value less than 0.05, NPL, LDR, CAR has significant effects on Earning Management while Leverage has not, on the other hand CAR only moderates the relation between LDR and Earning Management.

4.4.4 Multiple linear regression analysis

The regression equation forms as follows

Earning Management (Y) = 0.003397 + 0.000167 (Non-Performing Loan) - 6.10E-05 (Loan to Deposit Ratio) + 2.86E-05 (Leverage) - 0.000186 (Capital Adequacy Ratio) + 1.17E-06 (Capital Adequacy Ratio X Non-Performing Loan) + 2.45E-06 (Capital Adequacy Ratio X Loan to Deposit Ratio) - 1.05E-06 (Capital Adequacy Ratio X Leverage) + ε.

The explanation of above equation as follows:
The constant value of 0.003397 describes that Earning Management (E-Mag) will be 0.003397, when Non-Performing Loan (NPL), Loan to Deposit Ratio (LDR), Leverage (LEV), Capital Adequacy Ratio (CAR), CAR*NPL, CAR*LDR and CAR*LEV experiences no change.

NPL’s coefficient is positive at 0.000167 means that any increase NPL by 1 unit will increase E-Mag by 0.000167 vice versa, given other independent variables constant.

LDR’s coefficient is negative at -6.10E-05. This implies that any increase in LDR by 1 unit will decrease E-Mag 6.10E-05 and vice versa given other independent variables is constant.

The value of regression’s coefficient of LEV is at +2.86E-05. This means that any increase in LEV by 1 unit will increase E-Mag by 2.86E-05, given other independent variables is assumed to be constant and vice versa.

The CAR’s coefficient is at -0.000186. This implies that given other independent variables assumed constant, any increase of CAR by 1 unit will decrease E-Mag by 0.000186 and vice versa.

The regression coefficient of CAR*NPL is at + 1.17E-06. This implies that any increase in CAR*NPL by 1 unit will increase E-Mag by 1.17E-06, given other independent variables assumed constant and vice versa.

The CAR*LDR coefficient is at +2.45E-06. This means that when other independent variables assumed constant, any increase of the CAR*LDR by 1 unit will increase E-Mag by 2.45E-06 and vice versa.

The value of regression’s coefficient of CAR*LEV is at-1.05E-06. This states that any increase in CAR*LEV by 1 unit will decrease E-Mag by 1.05E-06, given other independent variables is constant and vice versa.

5. Discussion

The following table serves the hypotheses test result summary.

Table 12. Hypotheses Test Result Summary

<table>
<thead>
<tr>
<th>No</th>
<th>Hypotheses</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Company Risk affects significantly on Earning Management</td>
<td>Accepted</td>
</tr>
<tr>
<td>2</td>
<td>Liquidity affects significantly on Earning Management</td>
<td>Accepted</td>
</tr>
<tr>
<td>3</td>
<td>Leverage affects significantly on Earning Management</td>
<td>Rejected</td>
</tr>
<tr>
<td>4</td>
<td>Capital Adequacy Ratio affects significantly on Earning Management</td>
<td>Accepted</td>
</tr>
<tr>
<td>5</td>
<td>Capital Adequacy Ratio moderates the relation between Company Risk and Earning Management</td>
<td>Rejected</td>
</tr>
<tr>
<td>6</td>
<td>Capital Adequacy Ratio moderates the relation between Liquidity and Earning Management</td>
<td>Accepted</td>
</tr>
<tr>
<td>7</td>
<td>Capital Adequacy Ratio moderates the relation between Leverage and Earning Management</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Source: Processed Data, 2020

5.1 The effect of Company Risk on Earning Management (E-Mag)

The statistical result shows that Company Risk proxied by NPL significantly effects on E-Mag. NPL describes the degree of loan that are not well performed which directly caused to the company’s income/profit. Therefore NPL’s variation will cause profit fluctuates what management must avoid by doing earning management to produce a good information for the investor. At least study by Kamil and Herawati (2016) in line with this result.

5.2 The Effect of Liquidity on Earnings Management

Statistical result explains that Liquidity proxied by Loan to Deposit Ratio (LDR) significantly effects on E-mag) in negative way. It means that there is an opposite behavior between LDR and E-mag, the
higher liquidity the less likely the company to conduct earnings management and vice versa. High liquidity describes the company being able to pay off short-term debt with its current assets so that management does not have to do earnings management to get loans from creditors. Otherwise, low liquidity will drive opposite pattern push management to execute E-Mag. This result in line with studies by Moghaddam & Abbaspour (2017), Sadeghi & Zareie (2015), and Mulyana, et al (2018).

5.3 The Effect of Leverage on Earning Management

The result shows that Leverage (LEV) does not significantly effects Earning Management (E-mag). Leverage indicates the risks faced by companies where the company uses debt to finance operational activities and asset purchases. Companies with high leverage tend to have great risks such as the emergence of interest and the large debt costs that companies must pay. However, this is different from the results of research where leverage with debt to equity ratio indicators has no effect on earnings management and it is also incompatible with the debt (equity) hypothesis in positive accounting theory which states that the larger the ratio of corporate debt to equity the more likely managers are to use accounting methods that can increase profits. The logical reason is because in conducting profit management, the management does not always consider Leverage or it is caused by another reasons.

5.4 The effect of Capital Adequacy Ratio (CAR) on Earning Management (E-mag)

The result shows that CAR significantly affects E-mag in negative way, it means that the impact of CAR on E-mag is in opposite pattern, when CAR increase in positive sign will affect E-mag in negative and vice versa. CAR is a ratio of capital that must be hold by a bank management as a minimum threshold for covering its risk (Idroes and Sugiarto,2006) usually arranged by central bank. According to Bank Indonesia (2013) The capital adequacy ratio is the provision of minimum capital that must be maintained by each bank in a certain proportion of total assets weighted by risk (ATMR) by 8%. Capital Adequacy’s variable is the result of the basic capital with total risk-weighted assets (Zedan and Daas, 2017). The reason of CAR formed is for facing the bank risk, therefore CAR affects risk, affects E-mag caused E-mag is a strategy in managing earning variation or earning risk. This result in line with studies by Agnemas et al (2019), Yuliyandra et al (2019), Domenico and Iftekhar (2013), Abdolkarim and Narges (2017).

5.5 Capital Adequacy Ratio (CAR) moderates the relation between Non-Performing Loan (NPL) and Earning Management

Statistics result shows that CAR does not moderates the relation between NPL and E-Mag, it means CAR could not strengthen or weaken the relation between NPL and E-Mag.

5.6 Capital Adequacy Ratio (CAR) moderates the relation between Loan to Deposit Ratio (LDR) and Earning Management (E-Mag).

The result appears that CAR moderates the relation between LDR and E-Mag, it means CAR could strengthen or weaken the relation between LDR and E-Mag.

5.7 Capital Adequacy Ratio (CAR) moderates the relation between Leverage (LEV) and Earning Management (E-Mag).

Statistic result states that CAR does not moderate the relation between LEV and E-Mag, it means CAR could not strengthen or weaken the relation between LEV and E-Mag.
6. Conclusion and Suggestion

Simultaneously, all independent variables represented by NPL, LDR, LEV AND CAR weakly affect Earning Management, but from these variables partially, NPL, LDR and CAR significant effect on Earning Management, but LEV does not affect. Furthermore, CAR moderates the relation between LDR and Earning Management. This study implies that due to weakly impact, banking management must reobserve the role of Company Risk, Liquidity, Leverage and Capital Adequacy Ratio in executing Earning Management.

Considering that all independent variables, that is NPL, LDR, LEV, CAR weakly affect Earning Management, hence it is suggested to further researcher to re-observe the effect of these variables to Earning Management to find a better result about Earning Management determinant by replace with other variables.

References


Berk, Jonathan; DeMarzo, Peter (2011). Corporate Finance, second edition, Stanford University, Pearson International, USA


